

1 Scope

This document applies to all pneumatically operated, automated rotary or reciprocating, on/off, or modulating valves. It also includes automation components (i.e. positioners, transducers, and solenoids) as applicable. It provides a methodology for standardizing the acquisition and reporting of data used in assessing valve condition. The document includes the type of data to be acquired, the number of measurements to be recorded and their resolution, units of measure, nomenclature, computer file storage format, graphical presentation, and other reporting formats. It does not address interpretation of data or diagnosis of valve condition.

All data reported per this document are acquired with the valve out of service with no internal dynamic forces acting on the closure member.

2 Purpose

2.1 The purpose of this document is to provide users of diagnostic products with a uniform means of acquiring and reporting data used for diagnosing valve operability. This is necessary to provide the end user with a means of easily and accurately comparing diagnostic results from acquisition devices made by various manufacturers.

2.2 The following is intended to provide minimum resolution and definition of diagnostic tests performed. It does not preclude performing testing with more definition or resolution, or doing other testing with which to diagnose valve performance.

3 Definitions

3.1 actuator differential pressure:
the pressure differential across the piston(s) on double acting cylinders.

3.2 actuator pressure(s):
the input pressure(s) to the actuator.

3.3 valve position versus actuator pressure signature:
a plot of valve position versus actuator pressure (differential pressure for double acting) in both directions, over the minimum to maximum signal pressure specified for the application.

This signature may be generated by varying the control signal to a positioner or a pressure signal to the actuator. However, it must be clearly stated on the graph and in the other reported data which method was used.

3.4 diagnostic test data:
the set of valve operational data collected. This data is taken over the travel specified for the signature and may be reported graphically, as a tabulation of data points, or as a single element. The following is a list of typical diagnostic test data.

- a) Input signal
- b) I/P transducer output
- c) Positioner output pressure (see note)
- d) Actuator signal pressure(s) (see note)
- e) Valve position